

REMARKS

In the Office Action the Examiner rejected claims 1-20 under 35 U.S.C. 102 for being anticipated. Claims 1-20 remain in the application.

The rejection for anticipation was based on Nejime. The Examiner states that the Hopfield Neural Network in general, and such as the one in Nejime, discloses the trained neural network that models the behavior of the electrical circuit as claimed in the current patent application. The Hopfield network simply is the neural network mathematics.

Nejime, as stated in column 1, lines 7 – 10, relates to semiconductor integrated circuits, and more particularly to a semiconductor integrated circuit which is well suited to form a neural network model (Hopfield Neural network) in the shape of a monolithic IC. The circuit that is characterized in Nejime as a neural network model is in effect a hardware implementation of a neural network. Although it is characterized as a model, model in this context is meant in the sense of an example. A neural network can be considered to be not actually a physical thing but rather a mathematical representation. This is certainly true of the article describing the Hopfield continuous-variable network. In that sense any implementation of a neural network is a model and that is the sense in which it is used in Nejime. It's similar to making reference to "addition." Addition can be implemented in a physical circuit a variety of ways from what is called software, which is using a processor and memory, to hardware, which uses dedicated transistors to perform this function. Such hardware performs the function of adding and is called an adder. It does not model anything, it actually performs the function of adding. Use of the word model in Nejime makes it sound like modeling is being performed but it is actually simply implementing a neural network. Claim 1 requires a neural network that "models the behavior of the electrical circuit." Applicant cannot find and would not expect to find that Nejime performs this claimed requirement. Many of the dependent claims specify particular examples of what is being modeled. For example, claims 5 and 6 address power consumption. Applicants have not been able to find that Nejime has addressed this. The other claims dependent on claim 1 are similarly lacking correspondence in Nejime.

With regards to independent claims 12 and 18, Nejime, does not teach or suggest selectively modeling the behavior of a portion of the electrical circuit in order to generate a first plurality of cluster values for the behavior of the portion of the electrical circuit as claimed in

claim 12, or generating a plurality of cluster power values for the electrical circuit as claimed in claim 18. As stated previously, the method of claim 12 recites modeling the behavior of a portion of the electrical circuit in order to generate a first plurality of cluster values for the behavior of the portion of the electrical circuit. An example of the generated cluster values is provided in the present application. For example, power values are clustered into groups that have substantially the same power value. (FIG. 1, element 14, pg.4, line 16 - 17). After the different clusters have been formed, a feature extraction is performed that is in preparation for training the neural net 30. In Nejime, there is no mention of generating a first plurality of cluster values for the behavior of the portion of the electrical circuit. Nejime merely describes a semiconductor integrated circuit that can readily alter synaptic weights and that can realize a neuron circuit (Col. 2, lines 60 - 65). Both the altering of the synaptic weights and the realization of the neuron circuit do not involve generating a plurality of cluster values for the behavior portion the electrical circuit, as recited in claim 12, or generating a plurality of cluster values for the electrical circuit, as recited in claim 18. Since in 102 (b), each and every element of claim 12 and claim 18 must be taught or suggested in the cited art, Applicant respectfully submits that since Nejime does not teach or suggest each and every element of claim 12 and claim 18, the current patent application is patentable over Nejime. Furthermore, since claims 13 - 17 depend directly or indirectly from claim 12, and claims 19 - 20 depend directly or indirectly from claim 18, Applicant respectfully submits that claims 13-17 and claims 19-20 are also not taught or suggested by Nejime.


Applicant believes the application is in condition for allowance which action is respectfully solicited. Please contact the below-signed if there are any issues regarding this communication or otherwise concerning the current application.

If Applicant has overlooked any additional fees, or if any overpayment has been made, the Commissioner is hereby authorized to credit or debit Deposit Account 503079.

Respectfully submitted,

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